B·O·S·C
BOARD OF SCIENTIFIC COUNSELORS

NATIONAL CENTER FOR ENVIRONMENTAL RESEARCH STANDING SUBCOMMITTEE

Conference Call Summary
September 11, 2007
1:00 p.m. – 3:00 p.m. EDT

Welcome

Dr. Martin Philbert, University of Michigan, National Center for Environmental Research (NCER) Standing Subcommittee Chair

Dr. Martin Philbert welcomed the Board of Scientific Counselors (BOSC) NCER Standing Subcommittee members, U.S. Environmental Protection Agency (EPA) attendees, and other participants to the conference call. A list of participants is attached to this summary. Dr. Philbert reviewed the agenda and stated that the purpose of this conference call was to draft recommendations in response to the Subcommittee's charge. He confirmed that the Subcommittee members had received the list of questions for NCER that had been prepared during the face-to-face meeting. He then asked Ms. Susan Peterson to review the administrative procedures for the call.

Administrative Procedures

Ms. Susan Peterson, Designated Federal Officer (DFO) for the NCER Standing Subcommittee, Office of Research and Development (ORD), EPA

Ms. Susan Peterson reviewed the Federal Advisory Committee Act (FACA) procedures that are required for all BOSC Subcommittee meetings. As the Subcommittee DFO, Ms. Peterson serves as the liaison between the Subcommittee and EPA and ensures that all meetings comply with FACA guidelines.

All meetings and conference calls on substantive issues—whether in person, by phone, or by e-mail—that include at least one-half of the Subcommittee must be open to the public. A *Federal Register* notice must announce meetings 15 calendar days in advance, and the DFO and Subcommittee Chair must approve the meeting agenda and attend all meetings. A contractor is recording the minutes of this call and will prepare a summary for posting on the BOSC Web Site; the minutes must be certified by the Chair within 90 days of the meeting.

The BOSC is a federal advisory committee that provides independent scientific peer review and advice to EPA's ORD. The BOSC NCER Standing Subcommittee was established by the BOSC Executive Committee to review the management of NCER and the appropriateness of the science supported by the Center. Currently, there are eight members and two consultants on the Subcommittee. The Subcommittee has been asked to respond to charge questions and provide a report for the Executive Committee's deliberations. The Executive Committee has the authority to evaluate the Subcommittee's report, revise it as necessary, and submit it to ORD. The role of the BOSC is to provide advice and recommendations to ORD. The rights of decision making and program implementation remain with the Agency.

Subcommittee members are required to complete homework sheets on which they should note all time spent reading documents and preparing written materials either prior to or following any of the Subcommittee meetings. Time spent at meetings should not be included because those hours are recorded by the DFO. In addition, Subcommittee members have filed financial disclosure forms for review by EPA officials and have completed the required ethics training.

This is the second teleconference for the BOSC NCER Standing Subcommittee. The first teleconference was held on July 13, 2007, and a face-to-face meeting in Washington, DC, took place July 24-25, 2007.

No requests for public comment were submitted to Ms. Peterson prior to the call, but the agenda allows time for public comment at 2:10 p.m. If members of the public wish to offer comments at that time, they will be limited to 3 minutes each.

Although reversed on the draft agenda, Ms. Waldman suggested that she precede Mr. Myles Morse because her presentation was more general and his more specific.

Communication Efforts at NCER

Ms. Estella Waldman, Director of Communications, NCER, ORD, EPA

The scientific purview of NCER spans varied and diverse issues. NCER's work is received by scientists and administrators across the Center, ORD, regional offices, and program offices, and by other federal agencies, Congress, the media, and the public. Consequently, it is imperative that NCER consider its entire audience in its communications efforts. Dr. David Baker remarked that the broader scientific community was missing from the list of audiences on Ms. Waldman's slide. Ms. Waldman agreed that this was an oversight on her part; the scientific community is indeed a component of NCER's audience.

NCER broadcasts its activities primarily via its Web Site (http://www.epa.gov/ncer). Funding information, requests for applications (RFAs), workshop proceedings, grant annual and final summary reports, and bibliometric analysis results are included on NCER's Web Site, but other types of communications also are channeled via the Web. For example, an ORD science writer crafts documents announcing the findings of intramural and extramural researchers; these are posted as research "stories" on the Web site. Occasionally, NCER staff members author research stories. NCER contributes to the newsletters published through ORD and interacts with staff from program offices as well as the broader scientific community at regional and professional society meetings. When broader dissemination of information is desired, NCER pitches stories about research contributions and awards to news companies.

Communications at NCER are divided into pre- and post-award efforts. When an RFA is announced, materials related to the RFA are posted on the NCER Web Site and on http://www.grants.gov. Grant opportunities and press releases are disseminated via an electronic mailing list. For some RFAs, NCER targets specific demographics using postal or e-mail campaigns or through Weblogs. Currently, the use of Weblogs is limited to the People, Prosperity, and the Planet (P3) program, which is a national competition that awards research funding to undergraduate students to research, develop and design scientific, technical, and policy solutions to sustainability challenges.

Dr. Philbert asked how NCER communication efforts are strategized and stratified for optimum outreach to subgroups. Ms. Waldman responded that a communications team meets to brainstorm the options for targeting a specific applicant pool. The team experiments with a variety of broadcast methods and quantifies the success of their outreach efforts through numerical feedback such as how many recipients opened an e-mail or how many people viewed a news release published online. Feedback also is received by informal discussions with regional office staff, students, and so on. Dr. Philbert asked for examples of the criteria used for targeting specific groups. Ms. Waldman responded that the criteria vary depending on the type of award and the target audience.

Mr. Rejeski asked for more information on the outreach efforts via Weblogs. Ms. Waldman explained that NCER does not create Weblogs, but currently employs a contractor to disseminate information about the P3 program via student Weblogs. She added that P3 is a competitive program that offers awards for student-led projects on sustainability. Mr. Rejeski asked if the use of Weblogs has been successful, and Ms. Waldman confirmed that this has been a successful outreach mechanism.

RFAs elicit many different grants, and the communications group at NCER works with the Office of Public Affairs and ORD to conduct large broadcasts when awards are announced. For major grants, EPA administrators may hold "big check events"; these occur three or four times a year and have been very successful. The intent of big check events is to assemble scientists, administrators, and members of the public to generate excitement for a significant announcement. Ms. Waldman noted that the most recent of these events was held at Duke University and it was quite successful.

When fellows receive NCER awards or P3 recipients are announced, letters are distributed to Regional Press Offices and Regional Science Liaisons in the fellows' districts. The communications team sends personalized letters via regular mail, rather than standard e-mail notifications, in an effort to increase interest in NCER programs. NCER communicates with these parties actively and regularly during the month prior to every grant award and until the award date. Often, Regional Press Offices release information on the day of the award. When appropriate to the award type and target audience, the NCER communications group distributes fact sheets and brochures. In all cases, Web articles are used to broadcast award announcements. Depending on the level of publicity desired, information is posted on the NCER Web Site, the ORD Web Site, or the EPA Web Site. In addition, members of Congress are notified of new awards.

Following the disbursement of an award, the NCER communications group maintains contact with a quarterly e-mail that provides updates on each grant. Ms. Waldman noted that this effort has received positive feedback and it is an effective means of distributing project information. Internal communications include weekly e-mails detailing RFAs to be awarded, events and presentations happening both within and beyond NCER, and NCER outreach abroad. NCER also communicates at the level of program offices and EPA regions via scientist-to-scientist meetings and progress review workshops. These meetings have been informative and very popular; NCER hosted approximately 15 meetings last year. The Center regularly contributes funds to scientific meetings, and staff members attend, present, and participate in panel discussions at many meetings. NCER's Webmaster, Mr. Myles Morse, prepares and distributes CDs at scientific meetings; the CDs are used to educate meeting participants about NCER programs and they contain information related to the topics presented at the meeting. NCER hosts kickoff meetings in which grantees, EPA scientists, and stakeholders assemble to discuss preliminary findings and proposed research. During these meetings, collaborations may form and grants may transition into cooperative agreements. Later stages in the grant period are punctuated by progress review workshops. In general, these are limited to gatherings of scientists, although such reviews also exist for small business contracts through the Small Business Innovation Research (SBIR) program.

Grantees contribute to the communications effort by writing summaries for publication on the NCER Web Site. NCER also designs reports for professionals in the science disciplines; these include synthesis reports and state-of-the-science reports. The latter are extensive documents on narrow topics, and are published infrequently. Ms. Waldman noted that two recent state-of-the-science reports have reviewed bioengineering for pollution prevention and supercritical and near-critical O_2. A member of the Subcommittee asked why the slide described state-of-the-science reports as NCER products when they include the research of numerous sources. Ms. Waldman replied that, although there are some contributions from researchers outside of the Science To Achieve Results (STAR) program, the majority of the research described in these reports is funded by NCER. In addition to these reports, NCER prepares individual grant summaries for environmental scientists and decisionmakers with interest in specific topics. For example, a grant summary was prepared recently that summarized NCER research on the impacts of global climate change. There are between 10 and 12 of these summaries in progress.

NCER currently is collaborating with a science writer to create a research magazine. It will be modeled after the research periodicals distributed by the U.S. Department of Agriculture (USDA) and the National Institutes of Health (NIH). NCER staff have discussed the project with USDA staff members to gain insight from their experiences with their periodical. NCER plans to publish the magazine quarterly and to feature both extensive stories and short articles. It will be authored by contracted writers and internal staff. The debut publication is scheduled for October 2007, and will coincide with Children's Health Month at EPA.

NCER efforts are becoming increasingly multimedia-based. Fellowship conferences soon will be available by videocast, and the P3 outreach program offers a promotional video that is available as a DVD or Webcast. The P3 tools are marketed to members of the federal government with the goal of increasing sustainability awareness among federal officials.

In the future, the NCER communications team aspires to host regional science seminars more regularly. The goal for these seminars is to assemble grantees to inform the regions about NCER's research. The seminars could be broad or targeted in scope, depending on the needs of the region. The first of these was held in Boston, Massachusetts, and was a great success with approximately 300 attendees. These seminars have since evolved to include both STAR grantees and intramural scientists. The next science seminar is planned for October 2007 in Region 1.

A similarly themed plan is to conduct "road shows" in which National Program Directors (NPDs) would interact with intramural and extramural scientists about topics relevant to specific regions. As an example, Ms. Waldman suggested a road show focused on particulate matter (PM). This topic would be applicable to most regions, because regional offices typically are located in metropolitan areas.

"Tools workshops" also are in development. The STAR grantees have designed an astounding number of tools, models, and methods, and it is crucial that this work be communicated. Ms. Waldman suggested gathering grantees, EPA scientists, and other stakeholders to discuss new tools and to host training sessions.

Beyond the research community, manuals are used for communication to NCER's medical audiences. Manuals were distributed approximately 3 years ago to the Dallas medical community, and feedback was very positive. Future plans are to disseminate manuals more broadly, perhaps working through the American Medical Association (AMA).

Ms. Waldman emphasized that NCER is in need of advocates, both inside and outside of the Agency. The Center is very appreciative of the support it receives currently, but it is important to improve or increase NCER's recognition in the scientific community. She requested that the BOSC recommend ways for NCER to be more proactive about finding opportunities and options for communication.

Dr. Katherine McComas asked whether the communications staff received the *ad hoc* BOSC Subcommittee review on communications that was published in 2003. Ms. Waldman affirmed that she did receive this report, but clarified that the review covered all ORD communications, not just those of NCER. Dr. McComas asked if any of NCER's current practices were influenced by that 2003 report. Ms. Waldman answered that a formal response to the report was submitted to the BOSC by ORD and NCER contributed to that response. Dr. McComas inquired about the usefulness of the BOSC recommendations, specifically in terms of evaluating success beyond numerical data and using formative evaluations. Ms. Waldman explained that NCER attempts to look beyond numerical data, but non-numerical feedback is rare and difficult to obtain. Dr. McComas remarked that she did not want the current Standing Subcommittee to simply restate recommendation that were included in the previous report. She pointed out that two primary goals of NCER's communications group are to ensure high-quality applications and to explain the context and significance of the research. She requested examples of how these goals are being met. Ms. Waldman explained that a peer review division is responsible for

tracking the number of applications and the success rate. Project Officers (POs) and grant managers decide how to make award information available to potential applicants. Dr. McComas asked whether information on the success or failure of broadcast strategies feeds back to impact the communications group in any way. Ms. Waldman agreed that feedback is important and emphasized that the communications group acts to disseminate information. In contrast, the peer review division and grant managers encourage the best scientists to submit applications, recruit highly qualified reviewers to examine applications, and evaluate numerical data. She added that it is clear that the grant program is functioning properly because the applicant pool is highly competitive, and the science produced by the grantees is noteworthy. Ms. Waldman stated that, in a communications capacity, it is not possible to target the best scientists. Dr. McComas suggested that the communications group develop relationships with key groups that could influence leaders in the scientific community. Ms. Waldman agreed, adding that the communications group does collaborate with POs, other organizations, professional societies, and journals to better reach NCER's scientific audience. As science products emerge, publications in the peer-reviewed literature inform the academic community, and NCER posts articles to its Web Site for public access.

A Subcommittee member asked whether funding exists for effects-based research that can assess NCER's communications efforts. For example, could a survey be taken of Congressional members to obtain feedback? Ms. Waldman explained that legal ramifications preclude surveys, but NCER responds regularly to inquiries and requests for information from Congress, and NCER makes its research findings public. She added that adequate outreach to the medical community may be lacking.

A Subcommittee member commended the NCER communications staff on its extensive communications efforts.

Mr. Rejeski asked whether NCER staff undergo media training. Ms. Waldman confirmed that she had arranged media training for staff members that interact with the press in any capacity; however, some staff members have not yet completed their training.

Monitoring the Impact of NCER-Funded Research: Bibliometrics and Data Mining

Mr. Myles Morse, Webmaster, NCER, ORD, EPA

Mr. Myles Morse stated that his presentation will address Question 1.3 of the Subcommittee's charge: "What metrics are most useful to measure the impact of NCER's work?" He added that NCER discussed bibliometric and other analyses with the National Institute of Environmental Health Sciences (NIEHS), the National Oceanic and Atmospheric Administration (NOAA), and USDA to determine how other agencies were measuring the impact of their research programs.

Mr. Morse explained that, although NCER does not have a portfolio of metrics *per se*, it has elements of a portfolio, which include bibliometric analysis, expanded bibliometrics, external and internal data mining, case studies, user and client interviews, expert reviews, and economic analyses. Each element contributes different strengths. For instance, data mining provides the ability to connect research with immediate outcomes, case studies determine how research products are being implemented at the level of decision makers, user/client surveys and interviews provide focused feedback from targeted audiences, and cost-benefit analyses demonstrate the economic return from a proposed research plan.

The data analysis thrust at NCER is bibliometrics, which allows NCER to monitor how grantees compare to other investigators in terms of a variety of citation-based tools. NCER has experimented with expanded analysis tools, and has established data mining protocols to determine the effects of its research. Data mining efforts include analyses of internal decision making and the evaluation of trial software packages for external analyses. Currently, NCER is unable to purchase external data mining software because of budget and staffing insufficiencies.

A large amount of communication occurs during the RFA planning period. Research program reviews occur regularly as well as regional workshops. Mr. Morse remarked that results are not combined into one convenient resource for NCER's audiences. Proceedings are available on the NCER Web Site, and many of them discuss work being done by investigators, but quantitative analyses are lacking. NCER conducts outreach via a number of publication tools, brochures, and synthesis documents. Mr. Morse commented, however, that the Center needs assistance with targeting its outreach to particular audiences. As a government entity, NCER cannot conduct surveys easily, but there is great interest to assess the impact of NCER research on POs and regions. Mr. Morse suggested that interviews with targeted audiences might be possible and may help to develop an output assessment of short-, intermediate-, and long-term outcomes.

Mr. Morse asked that the BOSC Subcommittee help identify areas where NCER can establish case studies. These documents are relayed by POs to NPDs for Program Assessment Rating Tool (PART) reviews. NCER has developed case studies for the Children's Health Program, but in the future, it will be important to increase the effort toward outlining, grouping, and making available the results of these studies.

Mr. Morse commented that NCER undergoes reviews by the National Academies and the BOSC; however, it may be useful to increase the frequency of external reviews. Publication citations are analyzed primarily as indicators of success. This element of bibliometrics at NCER was deemed functional and useful during a recent BOSC review. NOAA agrees and has expressed interest in learning more about NCER's bibliometric techniques.

The results of NCER's bibliometric analyses suggest that grantees are impacting the scientific landscape; however, NCER continues to seek better metrics to determine if its research has fostered collaborations or additional work, affected policy and rulemaking, improved environmental health, enacted economic gains, or caused technologies or practices to change. Because much of NCER's research involves basic science, it is challenging to investigate the applications that have resulted. Mr. Morse noted that one NCER program—the SBIR program—targets the applied sciences, and thus is more readily evaluated by these metrics.

The bibliometric tools tabulate total citation counts and citations per publication. These factors are compared with thresholds developed by Thomson Scientific's Essential Science Indicators (ESI). Metrics also exist for the "impact factor" and "immediacy index" of the journals in which the papers are published. The bibliometric analysis determines what percentage of the progam's papers are published in the top 10 percent of journals as ranked by the Journal Citation Reports (JCR) impact factor and immediacy index.

Dr. Philbert asked if Mr. Morse had benchmarked against comparable assessments. Mr. Morse responded that NCER employs benchmarks from Essential Science Indicators, which compare citations across thousands of journals. Dr. Philbert suggested NCER compare its approach to other federal agencies, such as NIEHS. Mr. Morse responded that when NCER surveyed NIEHS in 2006, that agency had not begun conducting such analyses. In 2006, NIEHS reported that it was working with Battelle on a trial analysis of one of its programs, but it was not clear that bibliometric analyses similar to those conducted by NCER would be conducted in the near future.

NCER begins its bibliometric analyses with searches of Thomson Scientific's Web of Science or Elsevier's Scopus. These databases indicate the number of times a publication has been cited in journals covered by these databases. JCR is consulted for the impact factor and immediacy index of each journal. ESI categorizes each journal into one of 22 research fields and reports average citation rates as well thresholds for the top 10%, 1%, 0.1%, and 0.01% papers in each category. NCER compiles times cited data on the program's publications and compares them with the 10%, 1%, 0.1%, and 0.01% annual threshold values from ESI to determine if the publication meets any of these thresholds and can be classified as "highly cited." Detection of "hot papers" is accomplished by determining the citation rate in

2-month increments over a period of 2 years from the paper's publication date and applying In-cites "hot paper" thresholds to determine if the paper is hot. The bibliometric analyses also account for primary author self-citation, which is the referencing of one's own previously published documents in a publication. Mr. Morse noted that the self-citation rate is about 5 percent at NCER, which is well below the expected self-citation rates reported in the literature. Mr. Morse mentioned that NCER opted not to include complete citations for the publications that ranked in the top 10 percent because this would make the reports extremely long. He explained that in a recent Air Program citation analysis, 682 of the nearly 2,100 publications (approximately 33 percent) met the top 10 percent threshold. NCER is considering posting the list of highly cited papers (top 10%) for each analysis on the NCER Web Site.

NCER's bibliometric analyses have been expanded to include patents, in which searches are conducted on the U.S. Patent Office Web Site (http://www.uspto.gov). The analysis also determines how many other patents cite the program's patents. The bibliometric analysis reports also include the number of authors who appear in the ISIHighlyCited.com database, which is a database of the world's most influential researchers who have made key contributions to science and technology during the period from 1981 to 1999.

Public Comment

Ms. Peterson interrupted Mr. Morse's presentation to call for public comments at 2:10 p.m. No members of the public offered comments so Mr. Morse resumed his presentation.

Monitoring the Impact of NCER-Funded Research: Bibliometrics and Data Mining (continued)

Mr. Myles Morse, Webmaster, NCER, ORD, EPA

Mr. Morse summarized a subset of NCER's bibliometric analyses from 2007. For the Ecological Program, one-fifth of the papers were published in high-impact journals, one-fifth of publications were highly cited, and 56 of the publications were categorized as hot papers. For the Air Program, one-third to one-half of submitted manuscripts were published in high-impact journals and one-third of publications were classified as highly cited.

Mr. Morse invited the BOSC Subcommittee to recommend other parameters for NCER to consider in its bibliometric analyses. He commented that NCER had conducted a pilot study to try to determine the impact of the PM program. This pilot involved the analysis compared the results achieved using text mining software with the results from a manual analysis of the papers to determine why the program's papers were being cited. In this analysis, NCER conducted a manual review of 647 papers that had referenced 13 "very highly cited" papers in the PM program. The objective was to determine why researchers chose to cite NCER's research in their publications as a means of getting some insight into the impact of NCER research. NCER found that most of the citing documents supported the methodologies published by scientists in the PM program. In some cases, research was verified or extrapolated, and in other cases, measurement tools were employed or improved on. This type of analysis has not been pursued by NCER because of the high cost for the analysis and the report (between $60,000 and $80,000) and the concern among POs and NPDs that the report was not peer reviewed. Mr. Morse qualified that although bibliometric analysis suggests that the NCER program is successful, it is difficult to conclude with certainty that additional research was fostered. NCER is interested in targeting specific groups that can use these data, and the Center welcomes recommendations from the BOSC for other ways to benefit from this type of analysis.

NCER also evaluated and discussed its objectives of gleening information on why researchers were citing EPA program papers with a number of external data mining software providers, including VantagePoint, SSPS LexiQuest Mine, SAS Text Miner, and Attensity. A number of the companies were unable to attempt the analysis and, ultimately, NCER conducted a trial analysis with Attensity. The program

identified a portion of the citing documents, but the test was limited for a number of reasons. The vendor was not familiar with NCER's trigger words or vocabulary and the analysis was conducted on a small subset of the 647 publications analyzed manually because it was a trial conducted by the vendor prior to purchasing the software. The Center has not purchased the Attensity software, primarily because of the associated expenses—the software and training would cost more than $200,000.

Mr. Morse emphasized that the data mining tool determines which rulemaking documents refer to NCER research. The data mining tool was discussed by Dr. Chris Saint during the first Subcommittee teleconference, and it still is under development. Mr. Morse commented that the tool identifies citing documents that can be searched manually for more information as to why the EPA program publication is being cited. In addition, current efforts include the refinement of search features to characterize rulemaking documents more effectively. Although the total number of citing documents has not yet been determined, these results are anticipated within the year.

Dr. Baker asked whether NCER metrics are capable of acknowledging a grantee who develops an innovation that does not receive significant attention in the literature with respect to citation by other papers, but is worthy or noting in a BOSC or PART review. Mr. Morse answered that the analysis may detect it if it becomes a hot paper and even if it is not a hot paper or highly cited, the POs are aware of special cases and could recommend that NCER develop a case study if bibliometric tools could not detect it sufficiently.

Mr. Rejeski asked if EPA investigates the impact of NCER research on decision making and regulations in other countries, particularly Canada and Europe. Mr. Morse agreed that an assessment of NCER's international impact would be useful, but it has not been done yet. NCER currently is concentrating on assessing its impact inside the United States. He added that current documents generated by EPA programs are accessible globally.

Dr. Philbert thanked Mr. Morse and commended NCER's development and implementation of its bibliometric tools.

Follow-Up From the Face-to-Face Meeting

Dr. Martin Philbert, University of Michigan, Subcommittee Chair

Dr. Philbert thanked EPA attendees for their input during the teleconference. He stated that the Subcommittee had received documents from NCER. He asked if any members of the Subcommittee had comments regarding the completeness or appropriateness of the documents. In advance of this teleconference, Dr. Baker sent detailed comments to Dr. Philbert about the materials. Dr. Philbert requested that Dr. Baker read through his comments.

Dr. Baker directed the Subcommittee to the table that lists grants awarded by the exploratory program (page 3; NCER Responses to Initial Requests From the BOSC NCER Subcommittee). He pointed out that grants awarded from 2005 through 2007 primarily were related to nanotechnology or nanomaterials; however, the recent documents from NCER appear to contradict this table because they indicate only a fraction of the exploratory program budget being channeled to nanotechnology. Dr. Baker asked if his interpretation was correct. Mr. Thomas Barnwell explained that the apparent disconnect can be attributed to the time lapse between the announcement of an RFA and award disbursement. The two events are separated by nearly a year, and the funds that ultimately are disbursed may be modified from the original budget plan. Mr. Barnwell added that in 2006, NCER and NIH issued a joint solicitation and funding for nanotechnology was distributed to NIEHS.

Dr. Baker noted that NCER did not provide a complete answer to question 6 in the materials, "Has NCER considered developing a prize award program" (page 6). If his interpretation is correct, the BOSC Subcommittee was inquiring about awarding a prize to non-EPA entities for a goal that was not yet

attained. Mr. Barnwell replied that he was not certain that NCER could legally award prizes. He thought that the notion of awarding a prize for a product after it is delivered is against NCER's policy of disbursing grant money for proposed research. Mr. Barnwell noted that the idea of prizes implies contract-based work, which is uncommon in the research community. Dr. Philbert requested that NCER determine whether awarding prizes is outside of the Center's realm. He asked that NCER provide a response before the next Subcommittee meeting. Dr. Philbert suggested that NCER could tailor its potential prize award initiative on those of SpaceShipOne and/or the Department of Defense's Advanced Research Projects Agency robotics competition. Dr. Baker added that if NCER is not amenable to or unable to award prizes, that would be a legitimate response. Mr. Barnwell mentioned that the P3 program has elements of a prize. Although student teams are awarded grants for their research initially, those who demonstrate the ability to advance their field or market their technology are given additional funding. The SBIR program is contract-based and offers funding for a second phase of commercialization if a technology is deemed meritorious.

Dr. Adam Finkel stated that one of the BOSC Subcommittee questions for NCER was ambiguous. With regard to programs that will not be funded in future fiscal years (question 11; page 11), are the programs merely being reassigned to other centers, or are they being lost from EPA's purview entirely? Mr. Barnwell responded that in the case of the ecosystems program, there will be no extramural research component. Dr. Finkel added that some programs are undergoing drastic budget reductions but are not being removed completely. He commented that increases in other parts of the Agency might mitigate the decreases in NCER's programs.

Dr. Philbert confirmed that all members of the Subcommittee had voiced their comments. He asked whether each Subcommittee working group was comfortable drafting its respective sections of the recommendation letter to be submitted to the BOSC Executive Committee. Dr. Finkel stated that he has been unable to contact Dr. Ken Ramos. Dr. Philbert stated that one member of the Subcommittee will participate in two working groups if Dr. Ramos cannot be reached.

Dr. Philbert stated that he will work with Ms. Peterson to identify a leader for each of the three working groups by the end of the week. Working groups will meet separately to discuss and draft responses to each element of their charge. Ms. Peterson noted that the working group meetings will not be regulated by FACA because none of the working groups constitutes one-half of the Subcommittee.

Dr. Philbert requested that the working groups draft their responses before the next teleconference. Dr. McComas commented that she would appreciate a timeline for completion of the letter report. Dr. Philbert explained that a precise timeline was unavailable because the NCER Standing Subcommittee is the first of its kind. Ms. Peterson added that the BOSC Executive Committee is scheduled to meet in January 2008, and a draft of the letter report could be reviewed at that time. Dr. Philbert requested that the workgroups complete the first drafts by October 15, 2007. He added that the sections could be compiled and revised during the months of November and December before submission of a draft to the Executive Committee for review in January.

Ms. Peterson stated that NCER's responses to the Subcommittee's questions would be distributed shortly.

The call was adjourned at 2:50 p.m.

Action Items

- ✧ NCER will determine whether awarding prizes is outside of its realm and will prepare a response before the next Subcommittee meeting.
- ✧ By the end of the week, Dr. Philbert and Ms. Peterson will appoint a leader for each working group.
- ✧ If Dr. Ramos cannot be contacted, Dr. Philbert will choose a member of the Subcommittee to contribute to two working groups.
- ✧ Working groups will meet to prepare their responses to their assigned charge question.
- ✧ First drafts of each section of the letter report will be prepared by October 15, 2007. Drafts should be sent by e-mail to Ms. Peterson, who will consolidate them and distribute them to the Subcommittee members.
- ✧ The draft letter report will be discussed, revised, and finalized for submission to the Executive Committee in January 2008.
- ✧ NCER has responded to the Subcommittee's questions, and Ms. Peterson will make these responses available shortly.

PARTICIPANTS LIST

Subcommittee Members

Martin Philbert, Ph.D., Chair
Professor
Department of Environmental Health Sciences
University of Michigan
1420 Washington Heights
Ann Arbor, MI 48109-2029
Telephone: (734) 763-4523
Fax: (734) 763-7105
E-mail: philbert@umich.edu

David Baker, Ph.D.
Director Emeritus
National Center for Water Quality Research
Heidelberg College
Gillmor 316
310 E. Market Street
Tiffin, OH 44883-2462
Telephone: (419) 448-2941
E-mail: dbaker@heidelberg.edu

Dennis Clifford, Ph.D.
Director
Department of Civil and Environmental Engineering
Cullen College of Engineering
University of Houston
Engineering Building 1
Houston, TX 77204
Telephone: (713) 743-4266
Fax: (713) 743-4260

Adam Finkel, Ph.D.
Professor
Woodrow Wilson School of Public and International Affairs
Princeton University
402 Robertson Hall
Princeton, NJ 08544
Telephone: (607) 258-4828 (M/W/F)
(732) 235-9754 (T/R)
Fax: (609) 258-6082
E-mail: afinkel@princeton.edu

D. Alan Hansen, Ph.D.
Manager
Tropospheric Studies
Electric Power Research Institute
P.O. Box 10412
Palo Alto, CA 94303
Telephone: (650) 855-2738
Fax: (650) 855-2377
E-mail: ahansen@epri.com

David Rejeski
Director
Foresight and Governance Project
Woodrow Wilson International Center for Scholars
1300 Pennsylvania Avenue, NW
Washington, DC 20004
Telephone: (202) 691-4255
Fax: (202) 691-4001
E-mail: david.rejeski@wilsoncenter.org

Consultants to the Subcommittee

Katherine A. McComas, Ph.D.
Assistant Professor
Department of Communications
Cornell University
313 Kennedy Hall
Ithaca, NY 14853
Telephone: (607) 255-6508
Fax: (607) 254-1322
E-mail: kam19@cornell.edu

EPA Attendees

Thomas Barnwell, Jr.
U.S. Environmental Protection Agency
Office of Research and Development
National Center for Environmental Research
Ariel Rios Building (8701F)
1200 Pennsylvania Avenue, NW
Washington, DC 20460
Telephone: (202) 343-9862
E-mail: barnwell.thomas@epa.gov

Barbara Klieforth
U.S. Environmental Protection Agency
Office of Research and Development
National Center for Environmental Research
Ariel Rios Building (8722F)
1200 Pennsylvania Avenue, NW
Washington, DC 20460
Telephone: (202) 343-9266
E-mail: klieforth.barbara@epa.gov

Barbara Levinson, Ph.D.
U.S. Environmental Protection Agency
Office of Research and Development
National Center for Environmental Research
Ariel Rios Building (8701F)
1200 Pennsylvania Avenue, NW
Washington, DC 20460
Telephone: (202) 343-9720
E-mail: levinson.barbara@epa.gov

Myles Morse
U.S. Environmental Protection Agency
Office of Research and Development
National Center for Environmental Research
Ariel Rios Building (8722F)
1200 Pennsylvania Avenue, NW
Washington, DC 20460
Telephone: (202) 343-9706
E-mail: morse.myles@epa.gov

Gina Perovich
U.S. Environmental Protection Agency
Office of Research and Development
National Center for Environmental Research
Ariel Rios Building (8723F)
1200 Pennsylvania Avenue, NW
Washington, DC 20460
Telephone: (202) 343-9843
E-mail: perovich.gina@epa.gov

Chris Saint, Ph.D.
U.S. Environmental Protection Agency
Office of Research and Development
National Center for Environmental Research
Ariel Rios Building (8722F)
1200 Pennsylvania Avenue, NW
Washington, DC 20460
Telephone: (202) 343-9716
E-mail: saint.chris@epa.gov

Estella Waldman
U.S. Environmental Protection Agency
Office of Research and Development
National Center for Environmental Research
Ariel Rios Building (8722F)
1200 Pennsylvania Avenue, NW
Washington, DC 20460
Telephone: (202) 343-9803
E-mail: waldman.estella@epa.gov

Subcommittee Designated Federal Officer

Susan Peterson
U.S. Environmental Protection Agency
Office of Research and Development
National Center for Environmental Research
Ariel Rios Building (8104R)
1200 Pennsylvania Avenue, NW
Washington, DC 20460
Telephone: (202) 564-1077
E-mail: peterson.susan@epa.gov

Contractor Support

Beverly Campbell
The Scientific Consulting Group, Inc.
656 Quince Orchard Road, Suite 210
Gaithersburg, MD 20878
Telephone: (301) 670-4990
E-mail: bcampbell@scgcorp.com

Jennifer Griffin
The Scientific Consulting Group, Inc.
656 Quince Orchard Road, Suite 210
Gaithersburg, MD 20878
Telephone: (301) 670-4990
E-mail: jgriffin@scgcorp.com

B·O·S·C

BOARD OF SCIENTIFIC COUNSELORS

NCER STANDING SUBCOMMITTEE

AGENDA
September 11, 2007
1:00 pm – 3:00 pm Eastern Time

Participation by Teleconference Only
866-299-3188
code: 2025641077#

1:00 - 1:05 p.m.	Welcome - Purpose of Teleconference Call	Dr. Martin Philbert Subcommittee Chair
1:05 - 1:10 p.m.	Administrative Procedures	Ms. Susan Peterson Subcommittee DFO
1:10 - 1:40 p.m.	Monitoring the Impact of NCER-funded Research: Bibliometrics and Data Mining	Mr. Myles Morse Office of Research and Development
1:40 - 2:10 p.m.	Communication Efforts at NCER	Ms. Estella Waldman Office of Research and Development
2:10 - 2:20 p.m.	Public Comment	
2:20 -3:00 p.m.	Follow-Up From Face-to-Face Meeting - NCER Response to Members' Questions - Identify Additional Information Needs - Next Steps	Dr. Martin Philbert
3:00 p.m.	Adjourn	